**Ms. Damato**

**8th Grade Humanities**

**Topic:** Pros and Cons of Hydroponic Gardening

**Learning Objective:**SWBAT explain hydroponic gardening by completing a pros and cons chart and writing a persuasive essay.

**Do Now:**

What does the word urban mean? What does the word rural mean? Use 3 adjectives to describe each.

**Vocabulary:**

- metro - greenhouse -galvanized - vertical

- hydroponic - urban -rural -local

Turn&Talk: Think about inventions of the 1800’s, how has farming or gardening improved over the years?

**Mini-Lesson: Pros/Cons**

Teacher will explain the difference between pros and cons. PRO CON

Pros- benefits, positives, good things

Cons- negative, harmful

Guided practice: create a pro/con chart for living in the city

**Activity:**

Read article “**Urban Gardening, Part 1: The Hydroponic Lab on the Roof** By Ned Madden

Students will create a pro and con chart for hydroponic gardening

**Shareout:** Overall, is hydroponic gardening more beneficial or damaging? Why?

**Learning Assignment:**

Write a persuasive essay in which you describe both the positives and negatives of hydroponic gardening.

**Extension:** Students in Class 809 will create their own hydroponic gardening by planting seeds and setting up the hydroponic tank.

**Urban Gardening, Part 1: The Hydroponic Lab on the Roof**

By Ned Madden  
TechNewsWorld   
06/22/10 6:00 AM PT

In densely populated metro areas, any space that's suitable for gardening is probably also very attractive to developers looking to build structures on it instead. However, some city dwellers with persevering green thumbs have looked skyward, using the latest in hydroponic technology to put vegetable gardens on rooftops.

The farm has moved to the city in the form of rooftop hydroponic greenhouses, leaving the dirt and pests and pesticides behind in the rural field and going high-tech with a penthouse view from perches atop old buildings.

Restaurants, converted factories and warehouses, government facilities, the stores of mass retailers, apartment complexes -- a wide variety of buildings in major metropolitan burgs like New York City are starting to sprout the latest in climate-controlled, glass-enclosed structures framed with aluminum or galvanized steel. These computerized "urban agriculture" tools are used for growing fresh, lush vegetables, fruits, herbs, flowers and other kinds of tender or out-of-season plants that require soil-free environments with regulated humidity and ventilation and special temperature conditions for protection against excessive cold and heat.

BrightFarm Systems has been commissioned to design an environmental education center and local food production facility on the roof of the Manhattan School for Children in New York City.

Rooftop hydroponic greenhouse gardens have emerged in cities because urban areas often lack space on the ground for gardening -- the world's most popular hobby. Where there is free space suitable for gardening, development and building is not far behind due to the commercial opportunities presented.

New York City-based [BrightFarm Systems](http://www.brightfarmsystems.com) is a commercial design consultancy firm that provides technical services and project planning in support of rooftop greenhouses and "building-integrated" agriculture. BrightFarm has projects underway to put commercial hydroponic greenhouses on the rooftops of a church in Jamaica, Queens area of New York (set to open this summer), as well as the Manhattan School for Children on the Upper West Side and an environmental learning center at Stuyvesant Cove Park, located along the East River on a brownfield site.

[Sky Vegetables](http://www.skyvegetables.com), in Needham, Mass., is an urban agriculture company that aims to build sustainable, commercial-scale hydroponic farms on urban U.S. rooftops. The company has plans to erect a 440,000-square-foot greenhouse above the former Maxwell Shoe factory in Brockton, Mass.

These developments are a response to a growing consumer desire for fresh, tasty and vitamin-rich locally grown produce like tomatoes (the largest crop grown in greenhouses), bell peppers, lettuce, cucumbers, eggplant and more. That yen has given rise to a movement to integrate food production into the built environment - from community gardens on empty lots on up to rooftop hydroponic greenhouses.

"While hydroponic growing takes more technology than typical growing in soil, it can be very rewarding and a great way to produce safe food, close to the end consumer without taking up a lot of space," said Marilyn Brentlinger, owner of [CropKing](http://www.cropking.com), a Lodi, Ohio-based maker of hydroponic greenhouses.

Other benefits of growing locally include the opportunity to reduce the energy intensity of our food system, cut transportation costs, minimize vulnerabilities to scourges like drought, salmonella outbreaks and other contamination problems in huge agribusiness operations, and avoid pesticides and other chemicals that have an adverse environmental impact when used in conventional agriculture and food-production processes.

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| **CATEGORY** | **4- above average** | **3- meets standards** | **2- approaching standards** | **1- below standards** | **SCORE** |
| **Position Statement** | All of the evidence and examples are specific, relevant and explanations are given that show how each piece of evidence supports the author's position. | The position statement provides a clear statement of the author's position on the topic. | A position statement is present, but does not make the author's position clear. | There is no position statement. |  |
| **Evidence & Examples** | A variety of thoughtful transitions are used. They clearly show how ideas are connected | Most of the evidence and examples are specific, relevant and explanations are given that show how each piece of evidence supports the author's position. | At least one of the pieces of evidence and examples is relevant and has an explanation that shows how that piece of evidence supports the author's position. | Evidence and examples are NOT relevant AND/OR are not explained. |  |
| **Transitions** | The conclusion is strong and leaves the reader solidly understanding the writer's position. Effective restatement of the position statement begins the closing paragraph. | Transitions show how ideas are connected, but there is little variety | Some transitions work well, but some connections between ideas are fuzzy. | The transitions between ideas are unclear OR nonexistent. |  |
| **Closing Paragraphs** | The conclusion is strong and leaves the reader solidly understanding the writer's position. Effective restatement of the position statement begins the closing paragraph. | The conclusion is recognizable. The author's position is restated within the first two sentences of the closing paragraph. | The author's position is restated within the closing paragraph, but not near the beginning. | There is no conclusion - the paper just ends. |  |
| **Grammar & Spelling** | Author makes no errors in grammar or spelling that distract the reader from the content. | Author makes 1-2 errors in grammar or spelling that distract the reader from the content. | Author makes 3-4 errors in grammar or spelling that distract the reader from the content. | Author makes more than 4 errors in grammar or spelling that distract the reader from the content. |  |